

AMENDMENT TO THE SPECIFICATION

On page 2, paragraph [007], please replace with the following:

[007] At about 3200 psig and 705° F, water enters the super-critical state and becomes scH₂O (super-critical H₂O). scH₂O is a super organic solvent that breaks down organic compounds to their base elements (carbon, nitrogen, etc.). To convert biomass to crude oil, the molecular fractionation of the biomass is done to a point less than to the base elements. Therefore, scH₂O is not used. Instead, temperatures in the range of approximately ~~400~~ 350 to 600°F and pressures in the range of approximately 400-1200 psig are used to limit the molecular fractionation of the organic compounds. By limiting the temperatures, pressures and dwell time (cook time) of the thermobaric molecular fractionation process, the fractionation of the organic materials is limited and controlled, driving the carbon chain breaks desired and allowing the end product of the molecular fractionation of the organic material to be manipulated.

On page 3, paragraph [010], please replace with the following:

[010] In one embodiment, the anaerobic stripping reactor or preprocessor includes first, second and third areas. The first area, the new bio-slurry area, receives the organic material, seeds it with bacteria and allows it to stabilize. The first area then conveys the organic slurry to the second area. In the second area, the meta-stable area, the organic material is bio-actively softened. Preferably, the second area includes bioactive anaerobic bacteria, primarily methogens, which react with the organic material or slurry to produce one or more burnable gases, such as methane, and pull out sulfur through hydrogen sulfide gas production. Sulfur rich gases intermixed with the burnable gases may be removed by a sulfur-removing device such as an iron sponge by passing the burnable gases through the sulfur-removing device. The burnable fuels can then be used, for example in firing remaining system processes. Pulling out methane gas and stripping out sulfur from the organic material or bio-feedstock softens the organic slurry. This process also naturally breaks down starches, sugars, and proteins during gas production while leaving heavier hydrocarbon chains ideal for petroleum product production. Other bacteria of special design may be used to break down extra heavy carbon chains (e.g. more than C₂₆). Carbon chains of approximately C₆ to C₂₆ are desirable for diesel, kerosene, gasoline, naphthalene, and other petroleum products. Extra long carbon chains can be recycled for

additional ~~preprocessing~~ processing. The burnable gases may be collected by a pump and used as fuels to fire the remaining system processes, for example, to heat the cracking chamber or other devices in the system. The third area of the anaerobic stripping reactor, the batch ready area, receives the bio-actively softened slurry from the second area and conveys a small portion of the fully bio-activated slurry back to the first area, the new bio-slurry area, to perpetuate the reaction while the majority of the slurry proceeds to the thermobaric cracking chamber for processing.

On Page 8, paragraph [027], please replace with the following:

[027] Figure 2 diagrams an anaerobic stripping reactor 12 for use in the present invention. The anaerobic stripping reactor uses a maceration process to pulverize and liquefy the incoming organic feedstock into a slurry, suitable for efficient anaerobic reaction/digestion. The anaerobic process of the anaerobic stripping reactor produces burnable natural gases such as methane and also causes a bio-sulfuric stripping process through the natural anaerobic production of hydrogen sulfide (H_2S). The bio-sulfuric stripping process performs a three-fold process: first, to preprocess the incoming organic material and biomass into a softened slurry which is more efficiently processed into petroleum products, second to produce a burnable natural gas fuel to power further process heat requirements of the system, and third to extract significant levels of sulfur which is not desirable in petroleum products. During the bio-sulfuric stripping process, bioactive anaerobic bacteria, primarily methogens, react with the organic material to produce burnable gases such as methane gas (CH_4). Another gas, hydrogen sulfide (H_2S), is anaerobically produced. The hydrogen sulfide efficiently removes or carries out sulfur from within the biomass slurry. Sulfur can be removed from the methane/hydrogen sulfide gas mix by passing the gas through a sulfur removing device such as an iron sponge. The burnable gases, such as methane, may then be used to fire the remaining system processes, for example, to heat the thermobaric cracking chamber or other devices in the system. The anaerobic stripping reactor 10 softens the organic material or bio-feedstock by breaking down starches, sugars, proteins and cellulose complexes, leaving behind the fatty hydrocarbon chains suitable for petrochemical production. Other specially designed anaerobic bacteria may be used to target and break down extra heavy carbon chains (e.g. more than C_{26}). Carbon chains of approximately C_6 to C_{26} are desirable for diesel, kerosene, gasoline, naphthalene, and other petroleum products.

Long carbon chains can be recycled for additional ~~preprocessing~~ processing or to make asphalt type products.

On page 10, paragraph [032], please replace with the following:

[032] The preferred temperatures and pressures for the cracking chamber range from approximately ~~330~~ 350 to 600° F and from approximately 400 to 1,200 psig, respectively. The preferred dwell or cook time is from approximately 15 to 60 minutes. These ranges are used to control the extent of the molecular fractionation of the organic materials. Other temperature and/or pressure and/or dwell time ranges that limit the molecular fractionation of the organic matter may also be employed. The given ranges are suitable for limiting the molecular fractionation of the organic matter, as they are less than the required temperature and pressure to produce scH_2O . Temperatures and pressures in the given ranges fractionate the organic matter to something more than base elements. By controlling the temperatures, pressures and dwell time, the fractionation of the organic materials can be limited and controlled and the end products manipulated. Thus, the present invention manipulates the specific reactions or fractionations to maximize the production of certain product ranges, on a batch by batch basis to optimize end product production, whether that end product is diesel, gasoline, or other petroleum product or chemical product.